

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (original) An isolated nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof which promotes detachment of bacterial or fungal cells from a biofilm.
2. (Previously Presented) The isolated nucleic acid sequence of claim 1 comprising a nucleic acid sequence with 50% sequence identity to at least 30 contiguous nucleotides of SEQ ID NO:1, 3, 5, 7 or 9.
3. (Previously Presented) The isolated nucleic acid sequence of claim 1 comprising a nucleic acid sequence of SEQ ID NO:1, 3, 5, 7 or 9.
4. (Previously Presented) A nucleic acid sequence encoding a fusion polypeptide comprising the isolated nucleic acid sequence of claim 1 and a second nucleic acid sequence encoding a second polypeptide.
5. (original) A vector comprising the nucleic acid sequence of claim 1, 2, 3 or 4.
6. (original) A host cell comprising the vector of claim 5.
7. (original) An isolated amino acid sequence encoded by the nucleic acid sequence of claim 1, 2, 3 or 4.
8. (original) An isolated soluble,  $\beta$ -N-acetylglucosaminidase protein or active fragment or variant thereof which promotes detachment of bacterial or fungal cells from a biofilm.
9. (original) The isolated soluble,  $\beta$ -N-acetylglucosaminidase protein or active fragment or variant thereof of claim 8 comprising SEQ ID NO:2, 4, 6, 8 or 10.

10. (original) A fusion protein comprising the amino acid sequence of claim 8 or 9 and a second polypeptide.

11. (original) A pharmaceutical composition comprising an effective amount of the isolated soluble,  $\beta$ -N-acetylglucosaminidase protein or active fragment or variant thereof of claim 8 or 9 and a pharmaceutically acceptable carrier.

12. (original) A method for enhancing efficacy of an antibiotic against a bacterial infection comprising administering the pharmaceutical composition of claim 11 in combination with or prior to administration of the antibiotic.

13. (original) A medical device coated with the isolated soluble,  $\beta$ -N-acetylglucosaminidase protein or active fragment or variant thereof of claim 8 or 9.

14. (original) A wound healing device impregnated with the isolated soluble,  $\beta$ -N-acetylglucosaminidase protein or active fragment or variant thereof of claim 8 or 9.

15. (original) A liquid antiseptic solution comprising the isolated soluble,  $\beta$ -N-acetylglucosaminidase protein or active fragment or variant thereof of claim 8 or 9.

16. (original) A method for inhibiting detachment of bacterial or fungal cells from biofilm comprising mutating a *dspB* gene of bacterial cells to inhibit detachment of bacterial or fungal cells from biofilms.

17. (original) A method for inhibiting detachment of bacterial or fungal cells from biofilm comprising decreasing expression or levels of soluble,  $\beta$ -N-acetylglucosaminidase or inhibiting activity of soluble,  $\beta$ -N-acetylglucosaminidase in the bacterial cells so that detachment of bacterial or fungal cells from the biofilm is decreased.

18. (original) An isolated mutant of *Actinobacillus actinomycetemcomitans* which forms biofilm colonies which tightly adhere to surfaces but which are unable to release cells into the medium or spread over the surface.

19. (original) The mutant of claim 18 wherein the *dspB* gene is mutated.

20. (Currently Amended) A method for identifying an agent which modulates detachment of bacterial or fungal cells from biofilms comprising assessing an agent's ability to modulate activity or expression or levels of soluble,  $\beta$ -N-acetylglucosaminidase a protein of claim 9.

21. (Currently Amended) A method for promoting detachment of bacterial or fungal cells from a biofilm comprising contacting bacterial cells with soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof or a nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof a protein of claim 9, so that detachment of bacterial or fungal cells from a biofilm is promoted.

22. (Currently Amended) A method for reducing risk of infection of an organism by bacteria or fungi on a medical device or surgical instrument comprising contacting the medical device or surgical instrument with soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof a protein of claim 9 prior to contacting the organism with the medical device or surgical instrument.

23. (original) The method of claim 22 wherein the medical device is coated with the soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof.

24. (original) The method of claim 23 wherein the coating of soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof is dried on the medical device.

25. (original) The method of claim 22 wherein the medical device is a catheter and the soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof is in a catheter lock solution in the catheter.

26. (Currently Amended) A method for inhibiting, preventing or treating bacterial or fungal infections comprising administering to an organism soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof or a nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof a protein of claim 9 so that detachment of bacterial or fungal cells from a biofilm is promoted.

27. (original) The method of claim 26 wherein the bacterial or fungal infection is from a bacterium or fungus that produces a N-acetylglucosaminidase containing biofilm polysaccharide that can be degraded by soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof.

28. (original) The method of claim 26 wherein the soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof or a nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof is administered as a coating on a medical device implanted in the organism.

29. (original) The method of claim 26 wherein the soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof or a nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof is administered as a pharmaceutical composition.

30. (original) The method of claim 26 wherein the soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof or a nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof is incorporated into a liquid disinfecting solution and applied topically to the subject prior to insertion of an implantable medical device.

31. (original) The method of claim 26 wherein a wound dressing applied to the subject is impregnated with the soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof or a nucleic acid sequence encoding soluble,  $\beta$ -N-acetylglucosaminidase or an active fragment or variant thereof.

32. (original) A primer pair which identifies bacteria with *DspB* homologs.

33. (original) The primer pair of claim 32 comprising SEQ ID NO:12 and SEQ ID NO:13.

34. (original) A kit for identifying bacteria with *DspB* homologs comprising the primer pair of claim 32 or 33 and instructions for use of the primer pair to identify bacteria with *DspB* homologs.